WEST Search History

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DATE: Thursday, March 25, 2004

Hide?	Set Name	Query	Hit Count
	DB=USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR		
☐	L2	L1 and 424/450.ccls.	44
☐	L1	liposome$ adj5 pg	55

END OF SEARCH HISTORY

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L2: Entry 18 of 44 File: USPT Feb 25, 1997

DOCUMENT-IDENTIFIER: US 5605703 A
** See image for Certificate of Correction **
TITLE: Liposomes encapsulating doxorubicin

Detailed Description Text (42):
Proceeding in a manner analogous to that described in EXAMPLE 2 to obtain VET liposomes utilizing a ratio by weight of PL:PG:CHOL:DXR of 50:50:50:15 and varying the anti-oxidant agent employed. The results obtained show (Table III) that no appreciable differences exist in the percentages of encapsulation when different inhibitors of the lipidic peroxidation were utilized.

Detailed Description Text (45):
As in Example 1, VET liposomes of composition PL:PG:CHOL:DXR (50:50:50:15) and chroman 6 (7.5 mg) were prepared.

Detailed Description Text (51):
As in Example 1, VET liposomes of composition PL:PG:CHOL:DXR (50:50:50:15) and chroman 6 (7.5 mg) were prepared.

Detailed Description Text (52):
Analogously, VET liposomes of composition PL:PG:CHOL:DXR (50:50:50:15) were prepared without incorporating the anti-oxidant.

Current US Original Classification (1):
424/450

L2: Entry 21 of 44 File: USPT May 16, 1995

DOCUMENT-IDENTIFIER: US 5415869 A
TITLE: Taxol formulation

Brief Summary Text (19):
FIGS. 6A to B are plots of taxol versus %PG, showing the stability of taxol/liposomes as a function of % PG and the storage temperature taxol and lipid when mixed in chloroform to obtain 3% mole taxol per mole lipid. The lipids used were PC:PG at 10:0, 9:1, 7:3, 5:5, 3:7, and 0:10 ratios. Taxol/liposome formulations were stored at 4.degree. C.(A), and 20.degree. C.(B), recentrifuged, and analysed at different time points to determine how much taxol remained in liposomes. The results are expressed as % of initial taxol concentration remaining in the liposomes at different time points. The symbols for (A) are: Open squares: immediately after preparation; Filled squares: 1 hr; Open circles: 4 days; Filled circles: 6 days; Open triangles: 26 days; Filled triangles: 34 days; The symbols for (B) are: Open squares: immediately after preparation; Filled squares: 1 hr; Open circles: 1 day; Open squares with solid line: 3 days; Open circles: 4 days; Filled circles: 6 days; Open triangles: 26 days; Filled triangles: 34 days.

Detailed Description Text (40):
On most cell lines, the taxol-liposome formulation (PG:PC 1:9) was equipotent to free taxol. On other lines, such as C-26, taxol-liposomes were 3-fold less potent (IC.sub.50 =250.+-.70 .mu.M) than was free taxol. In investigating the potency of taxol on certain cell lines, it was found that the growth-inhibitory activity was enhanced by 0.1% dimethylsulfoxide ("DMSO"), the vehicle in which the drug was dissolved before addition to the cell cultures. For some tumor lines (e.g., 9L rate gliosarcoma and A90 human ovarian tumor), free taxol activity was enhanced approximately 8-fold by DMSO compared to drug dissolved directly in serum-containing growth medium (data not shown). However, the cytostatic activity of free taxol on C-26 was not affected by DMSO. Further investigation is directed toward understanding the relatively lower potency of taxol-liposomes on C-26 in vitro.

Current US Original Classification (1):
424/450

L2: Entry 35 of 44 File: USPT Aug 27, 1991

DOCUMENT-IDENTIFIER: US 5043166 A
TITLE: Liposome/anthraquinone drug composition and method

Detailed Description Text (14):
As seen from the table, 20 mole percent cholesterol produces a 2-fold to 3-fold enhancement in drug retention in PC liposomes, although no additional improvement is seen up to a cholesterol mole ratio of 50%. In liposomes formed with 30 mole percent PG, good drug retention achieved in the absence of cholesterol, but progressively greater stability is observed with increasing amounts of cholesterol. PS, another negatively charged phospholipid, gives substantially the same result as found with PG. Additional studies not reported here indicate that the increased drug retention is seen over a range of negatively charged phospholipid of between about 10-40 mole percent. Interestingly, the presence of only 10 mole percent cardiolipin (diphosphatidylglycerol), which contains a double negatively charged head group, substantially eliminated the cholesterol effect, giving poor drug retention even at 50 mole percent cholesterol.

Detailed Description Text (31):
In a second study, DXR/liposomes were prepared substantially as described in Example I, under nitrogen atmosphere or air, and in the presence or absence of .alpha.-T and ferrioxamine, as indicated in Table VI below. As in the experiment described above, the liposomes were composed of PG:PC:cholesterol, in a mole ratio of 3:7;4. .alpha.-T, when included, was present at a concentration of about 1.5 mole percent, and ferrioxamine, when included, was present at a concentration of 50 .mu.M. The liposomes were stored under anoxic conditions for 1 day at 4.degree. C., as above. Chemical modification of the drug was detected both by fluorescence emission spectroscopy and by assaying the change in drug toward a more lipophilic species, as described in Section A above.

Current US Original Classification (1):
424/450

L2: Entry 36 of 44 File: USPT Jun 11, 1991

DOCUMENT-IDENTIFIER: US 5023087 A
TITLE: Efficient method for preparation of prolonged release liposome-based drug delivery system

Detailed Description Text (21):
Typically, the major phospholipid (PL) components in the liposomes are phosphatidylcholine (PC), phosphatidylglycerol (PG), phosphatidylserine (PS), phosphatidylinositol (PI) or egg yolk lecithin (EYL). PC, PG, PS and PI having a variety of acyl chain groups or varying chain length and degree of saturation are commercially available, or may be isolated or synthesized by well-known techniques. In general, less saturated PLs are more easily extruded, particularly when the liposomes must be sized below about 0.3 microns, for purposes of filter sterilization or other formulation requirement. Methods used in sizing and filter-sterilizing liposomes are discussed below.

Detailed Description Text (23):
Experiments conducted in support of the present invention, and reported in Examples IV and VII below, show that negatively charged phospholipids significantly increase the rate of clearance of lipid and entrapped compound from the site of an IM injection, when compared with liposomes formed from PC alone or PC/cholesterol mixtures. Although the studies involved liposomes formulated with selected mole ratios of PG, all other negatively charged phospholipids could be used. The PG effect observed appears to be related, in part, to the ability of charged lipids to prevent spontaneous liposome aggregation in vitro and in vivo. Size measurements on liposomes after extrusion through a 1 micron pore size polycarbonate membrane, reported in example IV, show that PG containing liposomes have stable sizes of about 1 micron, whereas liposomes containing only PC have particle sizes between about 3-5 microns. As will be seen below, and according to one important feature of the method of the invention, larger liposome sizes show longer drug release times at an IM site of injection.

Detailed Description Text (24):
Evidence presented in Examples III and VII indicate that negatively charged phospholipids may also increase in situ lipid and drug release by a mechanism unrelated to liposome size. Briefly, liposomes composed of pure PG (plus a small amount of alphatocopherol) showed more rapid clearance of lipid tracer and a radio-labeled encapsulated drug than similar-sized liposomes containing only 5 or 10 mole percent PG.

Detailed Description Text (85):
The effect of lipid composition on lipid and CT clearance from an IM site was also examined. As discussed above, and reported in Examples IV and V, addition to the liposomes of a negatively charged phospholipid, such as PG, significantly increases the rate of clearance oflipid and encapsulated CT from an IM site. As noted in Example IV, the PG effect may be related in part to the reduced liposome aggregation which is seen in PG-containing liposomes.

Current US Original Classification (1):
424/450

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L2: Entry 39 of 44 File: USPT Apr 24, 1990

DOCUMENT-IDENTIFIER: US 4920016 A
** See image for Certificate of Correction **
TITLE: Liposomes with enhanced circulation time

Detailed Description Text (121):
Mice innoculated with J6456 lymphoma cells were injected IV with the MLVs (1 umole phospholipid/animal) or with an equivalent amount of free doxorubicin. Tissue distribution of the drug, 24 hours post administration, was determined fluorometrically, with the results shown in Tables 13 below. As seen, drug levels of the drug, expressed as percent of injected dose/g tumor, were similar to free drug for the two liposome compositions (PG:PC:CH and GM.sub.11 :PG:PC:CH) which do not show significantly enhanced blood/RES ratios, whereas the drug level in tumors was enhanced 3-6 fold with GM.sub.1 :DSPC:CH liposomes which show optional blood/RES ratios.

Current US Cross Reference Classification (3):
424/450

WEST Search History

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DATE: Thursday, March 25, 2004

Hide?	Set Name	Query	Hit Count
		DB=USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR	
☐	L5	(negatively adj3 charged) adj3 (liposome$) same advantage$	8
☐	L4	L3 and chemotherapy	32
☐	L3	(negatively adj3 charged) adj3 liposome$	222
☐	L2	(glutathione adj5 inhibitor$) and liposome$	34
☐	L1	(glutathione adj5 inhibitor$) same liposome$	0

END OF SEARCH HISTORY

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L2: Entry 2 of 34 File: USPT Sep 30, 2003

US-PAT-NO: 6627732
DOCUMENT-IDENTIFIER: US 6627732 B1

TITLE: Glutathione derivatives and their dosage forms

DATE-ISSUED: September 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sakon; Kiyoyuki	Hino			JP
Naniwa; Yoshimitsu	Hino			JP
Kobayashi; Mitsuru	Hino			JP
Miura; Daishiro	Hino			JP
Imai; Hiroshi	Hino			JP
Imaizumi; Atsushi	Hino			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Teijin Limited	Osaka			JP	03

APPL-NO: 09/ 673449 [PALM]
DATE FILED: October 16, 2000

PARENT-CASE:
This application is a 371 of PCT/JP99/02044, filed Apr. 16, 1999, which claims priority to JP 10-106359, filed Apr. 16, 1998.

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	10-106359	April 16, 1998

PCT-DATA:

APPL-NO	DATE-FILED	PUB-NO	PUB-DATE	371-DATE	102(E)-DATE
PCT/JP99/02044	April 16, 1999	WO99/54346	Oct 28, 1999		

INT-CL: [07] C07 K 5/08

US-CL-ISSUED: 530/331; 514/18, 514/19, 562/557, 562/573
US-CL-CURRENT: 530/331; 562/557, 562/573

FIELD-OF-SEARCH: 514/19, 514/18, 562/557, 562/573, 530/331

PRIOR-ART-DISCLOSED:

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
95 05863	March 1995	WO	
96/40205	December 1996	WO	
99 37802	July 1999	WO	
00/44366	August 2000	WO	

OTHER PUBLICATIONS

Matthew H. Lyttle et al., "Isozyme-specific glutathione-S-transferase inhibitors: design and synthesis" Journal of Medicinal Chemistry (1994) vol. 37, No. 1, p. 189-194.
Paul J. Ciaccio et al., "Modulation of detoxification gene expression in human HT29 cells by glutathione-S-transferase inhibitors" Molecular Pharmacology (1995) vol. 48, No. 4, p. 639-647.
Ryan T. Koehler et al., "Ligand-based protein alignment and isozyme specificity of glutathione S-transferase inhibitors" Proteins Structuro, Function and Genetics (1997), vol. 28, No. 2, p. 202-216.

ART-UNIT: 1653

PRIMARY-EXAMINER: Low; Christopher S. F.

ASSISTANT-EXAMINER: Lukton; David

ATTY-AGENT-FIRM: Sughrue Mion, PLLC

ABSTRACT:

The present invention provides a glutathione derivative having a dramatically enhanced hematopoiesis promoting effect in the living body represented by the formula (I): ##STR1## where A represents H or a C1-C20 acyl group; R.sub.1 represents a C1-C26 alkyl group or a C3-C26 alkenyl group; and R.sub.2 represents H, a C1-C26 alkyl group or a C3-C26 alkyl group, with the proviso that compounds are excluded in which R.sub.1 is a C1-C10 alkyl group or a C3-C10 alkenyl group, and simultaneously R.sub.2 is H, a C1-C10 alkyl group or a C3-C10 alkenyl group. The present invention also provides a salt of the glutathione derivative, or a colloidal composition that enables the safe and effective development of the effects of the glutathione derivative in the living body.

15 Claims, 14 Drawing figures

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L4: Entry 6 of 32 File: USPT Mar 5, 2002

US-PAT-NO: 6352996
DOCUMENT-IDENTIFIER: US 6352996 B1
** See image for Certificate of Correction **

TITLE: Liposomal prodrugs comprising derivatives of camptothecin and methods of treating cancer using these prodrugs

DATE-ISSUED: March 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cao; Zhisong	Friendswood	TX		
Giovanella; Beppino C.	Houston	TX		

US-CL-CURRENT: 514/283; 546/48

CLAIMS:

What is claimed is:

1. A liposomal prodrug comprising an active component and a liposomal delivery system for delivering said active component, said delivery system comprising a liposome, a micelle and/or a lipid membrane receptacle, which restrains said active component, said active component comprising a compound of the formula: ##STR8##

wherein R.sub.1 is a C.sub.2 -C.sub.4 alkyl group, a C.sub.6 -C.sub.15 alkyl group, a C.sub.3 -C.sub.8 cycloalkyl group, a C.sub.2 -C.sub.15 alkenyl group or a C.sub.2 -C.sub.15 epoxy group when R.sub.2 is H; and R.sub.1 is a C.sub.1 -C.sub.15 alkyl group, a C.sub.3 -C.sub.8 cycloalkyl group, a C.sub.2 -C.sub.15 alkenyl group or a C.sub.2 -C.sub.15 epoxy group when R.sub.2 is NH.sub.2 or NO.sub.2.

2. The liposomal prodrug of claim 1, wherein R.sub.1 is a linear C.sub.2 -C.sub.4 alkyl group or C.sub.6 -C.sub.15 alkyl group when R.sub.2 is H and R.sub.1 is a linear C.sub.1 -C.sub.15 alkyl group when R.sub.2 is NH.sub.2 or NO.sub.2.

3. The liposomal prodrug of claim 1, wherein R.sub.1 is a linear C.sub.2 -C.sub.15 alkenyl group or a C.sub.2 -C.sub.15 epoxy group.

4. The liposomal prodrug of claim 2, wherein R.sub.2 is NH.sub.2.

5. The liposomal prodrug of claim 1, wherein R.sub.2 is NH.sub.2.

6. The liposomal prodrug of claim 3, wherein R.sub.2 is NH.sub.2.

7. The liposomal prodrug of claim 2, wherein R.sub.1 is a linear methyl, ethyl or propyl group and R.sub.2 is NH.sub.2.

8. The liposomal prodrug of claim 1, wherein R.sub.1 is a C.sub.3 -C.sub.8 cycloalkyl group and R.sub.2 is NH.sub.2.

9. The liposomal prodrug of claim 1, wherein R.sub.2 is NH.sub.2, and R.sub.1 is CH.sub.3 ; CH.sub.2 CH.sub.3 ; or CH.sub.2 CH.sub.2 CH.sub.3 ; CH.dbd.CH.sub.3 ; CH.dbd.CHCH.sub.3 (trans) or ##STR9##

10. The liposomal prodrug of claim 1, wherein said delivery system comprises at least one of cholesterol and phospolipids.

11. The liposomal prodrug of claim 1, wherein said delivery system comprises at least one unilamellar liposome.

12. The liposomal prodrug of claim 1, wherein said delivery system comprises at least one micelle and said micelle comprises a surfactant.

13. A method for treating cancer in a patient comprising administering a composition comprising an effective amount of the liposomal prodrug of claim 1, wherein said cancer is responsive to said composition.

14. The method of claim 13, wherein R.sub.1 is a linear C.sub.2 -C.sub.4 alkyl group or a C.sub.6 -C.sub.15 alkyl group where R.sub.2 is H and R.sub.1 is a linear C.sub.1 -C.sub.15 alkyl group when R.sub.2 is NH, or NO.sub.2.

15. The method of claim 13, wherein R.sub.1 is a linear C.sub.2 -C.sub.15 alkenyl group or a C.sub.2 -C.sub.15 epoxy group.

16. The method of claim 14, wherein R.sub.2 is NH.sub.2.

17. The method of claim 15, wherein R.sub.2 is NH.sub.2.

18. The method of claim 14, wherein R.sub.1 is a linear methyl, ethyl or propyl group and R.sub.2 is NH.sub.2.

19. The method of claim 13, wherein R.sub.1 is a C.sub.3 -C.sub.8 cycloalkyl group and R.sub.2 is NH.sub.2. ##STR10##

20. The method of claim 13, wherein R.sub.2 is NH.sub.2, and R.sub.1 is CH.sub.3 ; CH.sub.2 CH.sub.3 ; or CH.sub.2 CH.sub.2 H.sub.3 ; CH.dbd.CH.sub.3 ; CH.dbd.CHCH.sub.3 (trans) or ##STR11##

21. The method of claim 13, wherein said delivery system comprises at least one of cholesterol and phospolipids.

22. The method of claim 13, wherein said delivery system comprises at least one unilamellar

liposome.

23. The method of claim 13, wherein said delivery system comprises at least one micelle and said micelle comprises a surfactant.

24. A compound of formula (I): ##STR12##

wherein R.sub.1 is a C.sub.1 -C.sub.15 alkyl group, a C.sub.3 -C.sub.8 cycloalkyl group, a C.sub.2 -C.sub.15 alkenyl group, or C.sub.2 -C.sub.15 epoxy group and R.sub.2 is NH.sub.2.

25. The compound of claim 24, wherein R.sub.1 is a linear C.sub.1 -C.sub.15 alkyl group.

26. The compound of claim 24, wherein R.sub.1 is a linear C.sub.2 -C.sub.15 alkenyl group.

27. The compound of claim 24, wherein R.sub.1 is C.sub.2 -C.sub.15 epoxy group.

28. The compound of claim 24, wherein R.sub.1 is a C.sub.3 -C.sub.8 cycloalkyl group.

29. The compound of claim 24, wherein R.sub.1 is a linear methyl, ethyl, propyl, butyl, hexyl or octyl group.

30. The compound of claim 24, wherein R.sub.1 is ethyl.

31. A method for treating cancer in a patient comprising administering a composition comprising an effective amount of the compound of claim 24.

32. The method of claim 31, wherein R.sub.1 is a linear C.sub.1 -C.sub.15 alkyl group.

33. The method of claim 31, wherein R.sub.1 is a linear C.sub.2 -C.sub.15 alkenyl group.

34. The method of claim 31, wherein R.sub.1 is C.sub.2 -C.sub.15 epoxy group.

35. The method of claim 31, wherein R.sub.1 is a linear ethyl, propyl, butyl, hexyl, or octyl group.

36. The method of claim 31, wherein R.sub.1 is ethyl.

37. The method of claim 31, wherein R.sub.1 is a linear methyl group.

38. The method of claim 31, wherein R.sub.1 is a C.sub.3 -C.sub.8 cycloalkyl group.

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L4: Entry 22 of 32 File: USPT May 16, 1995

DOCUMENT-IDENTIFIER: US 5415869 A
TITLE: Taxol formulation

Brief Summary Text (4):
There is a continuing need for development of new anticancer drugs, drug combinations, and chemotherapy strategies. To spur development of new cancer drugs, a screening and discovery program for cancer chemotherapeutics was established at the National Cancer Institute (NCI) in 1960. Screening of plant extracts began with a survey of the flora of the U.S. conducted in collaboration with the U.S. Department of Agriculture (S. A. Schepartz, Cancer Treat. Repts, 60, 975 (1976) and J. A. Hartwell, Cancer Treat. Repts, 60, 1031 (1976)). Taxus brevifolia Nutt. (Family Taxaceae), the Pacific yew or Western yew, was collected in 1962 as part of this program from Washington State. The Pacific yew is a smallish, slow growing tree native to the Pacific Northwest with a North-South range from Southeastern Alaska to Northern California, and extending eastward to mountainous areas of Idaho and Montana. It is often found as an understory tree in populations of Douglas fir. The Taxaceae is a small, somewhat isolated, botanical family with 5 genera of which Taxus is the most prominent with eleven species worldwide.

Brief Summary Text (12):
With the pharmaceutical composition of the present invention, taxol can be safely and effectively delivered rapidly (i.e. in one hour or less) and by administration intravenously or into other body compartments, as part of what are believed to be liposomes, in the substantial absence of deleterious crystal formation. By incorporating negatively charged phospholipids in each individual liposome, the liposomes tend to repel each other, and, therefore, they do not aggregate like those formed with only zwitterion phospholipids, as utilized in prior efforts to encapsulate taxol in liposomes. The use of only zwitterion phospholipids tends to cause the individual liposomes to drift toward each other, adhere, and grow in size by aggregation or fusion. On the other hand, an excess of negative charge destabilizes the taxol formulation, leading to crystal formation. By utilizing a mixture of negatively charged phospholipids and zwitterion phospholipids in appropriate proportions, taxol crystal formation is prevented for a long period of time to allow safe intravenous administration. An additional benefit of the small particles of the present invention is that they remain in circulation for longer time periods. Decreasing negative charge further increases the circulation time of these particles. The ability of the present invention to deliver taxol without aggregation or crystal formation thus constitutes a substantial advance in the art.

L4: Entry 25 of 32 File: USPT Dec 18, 1990

DOCUMENT-IDENTIFIER: US 4978654 A
TITLE: Composition and method for treatment of disseminated fungal infections in mammals

Detailed Description Text (57):
A 13-year old female developed diffuse, poorly differentiated lymphocytic lymphoma a number of years ago. She achieved a complete remission following the administration of chemotherapy. Five years later, she was hospitalized with fever, fatigue and general malaise and malignant lymphoid cells were identified in the bone marrow. She was treated with parenteral cyclophosphamide, vincristine and prednisolone. Intrathecal cytosar, hydrocortisone and methotrexate were given prophylactically. After achieving complete remission, maintenance therapy was instituted with 6-mercaptopurine and methotrexate for six months, after which all chemotherapy was stopped.

Detailed Description Text (62):
A 22-year old male with acute lymphocyte leukemia had achieved complete remission after induction chemotherapy. Eleven months later, he was found to have recurrent leukemia in the bone marrow. After failing reinduction chemotherapy for four months, he was started on high dose cytosar (3 g/m.sup.2 /daily.times.12). He developed a lesion in the nasal turbinate which on biopsy and culture was found to be Aspergillus terreus. He received a total of 2.4 gm Amp B intravenously which was always associated with severe nausea, fever and chills.

Other Reference Publication (4):
Hopfer, R. L., "In Vitro Antifungal Activities of Amphotericin B and Liposome-Encapsulated Amphotericin B", vol. 25, No. 3, Anti-microbial Agents and Chemotherapy, Mar. 1984, pp. 387-389.

Other Reference Publication (7):
Lopez-Berestein, G. et al., "Prophylaxis of Candida albicans Infection in Neutropenic Mice with Liposome-Encapsulated Amphoterin B", vol. 25, No. 3, Antimicrobial Agents and Chemotherapy Mar. 1984.

Other Reference Publication (13):
Magee, Wayne E. et al., "A Comparison of Negatively and Positively Charged Liposomes Containing Entrapped Polyinosinic Polycytidylic Acid for Interferon Induction in Mice", 451, Biochimica et Biophysica Acta, 1976, pp. 610-618.

First Hit Fwd Refs

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L5: Entry 6 of 8 File: USPT Oct 12, 1999

DOCUMENT-IDENTIFIER: US 5965434 A
TITLE: Amphipathic PH sensitive compounds and delivery systems for delivering biologically active compounds

Brief Summary Text (11):
On the basis of these principles of liposome phases, negatively-charged, pH-sensitive liposomes have been designed to release their contents outside the endosomes by taking advantage of the endosomes' acidification. In studies using specific ligands to carry pH probes into the endocytic pathway, the pH falls to pH 6.5 within 5 minutes of formation of the endocytic vesicles. Maximal acidification as low as pH 4.6 has been reported as the intravesicular pH in macrophages, but the pH may be higher in other cell types. In fibroblasts or epithelioid cells (CV-1), the endosome pH may be approximately 5.5. Several lipid-enveloped viruses such as influenza, vesicular stomatitis virus and Semliki Forest virus microinject their genome into the cytoplasm of the host cell by fusion of their surrounding endosome membrane after endosome acidification. Therefore, liposomes that will destabilize or fuse with the endosome membrane at mildly acidic pH can release their aqueous contents into the cytoplasm.

Brief Summary Text (69):
Several advantages flow from the systems, compounds, and methods of the present invention. One of the advantages of the methods and materials disclosed herein is that they permit up to 100% entrapment of polyanionic substances by an exceedingly convenient and practical protocol. Another advantage of a delivery system of the present invention is that it is not subject to instability due to leakage of the entrapped polyanionic substance. Still another advantage is that the convenient and practical methodology disclosed herein yields compositions of matter with unique properties enabling entry of the entrapped polyanionic substance, such as DNA, into living cells. This property of the lipid/polyanion complex enables the expression of biologically activities to extents not previously seen in these cells. Further, this methodology leads to results in muscle in whole organisms that have not been obtained with conventional liposomes, pH-insensitive cationic (positively-charged) liposomes or pH-sensitive, anionic (negatively-charged) liposomes.

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L5: Entry 8 of 8 File: DWPI Apr 24, 1992

DERWENT-ACC-NO: 1992-189238
DERWENT-WEEK: 199720

TITLE: Amphiphilic cpds. for forming liposome - contain succinic acid and aminoacid moieties

Basic Abstract Text (3):
USE/ADVANTAGE - (I), (II) and (III) are used as membrane constituent for a negatively charged single layer liposome. The carboxylfluorescein barrier capability of the liposome at 37 deg.C. is at least that of dipalmitoylphosphatidylcholine.

Equivalent Abstract Text (7):
USE/ADVANTAGE - The cpds. are useful for forming a stable unilayer liposome and a negatively charged liposome where they are membrane components. The cpds. give liposomes which minimise the leakage of a drug encapsulate within and scarcely undergo association, aggregation or precipitation.

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Search Results - Record(s) 1 through 8 of 8 returned.

☐ 1. Document ID: US 6511677 B1

Using default format because multiple data bases are involved.

L5: Entry 1 of 8 File: USPT Jan 28, 2003

US-PAT-NO: 6511677
DOCUMENT-IDENTIFIER: US 6511677 B1

TITLE: Polymerizable fatty acids, phospholipids and polymerized liposomes therefrom

DATE-ISSUED: January 28, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Brey; Robert N	Alpharetta	GA		
Liang; Likan	Wheeling	IL		

US-CL-CURRENT: 424/450; 514/557, 560/198, 564/123

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 2. Document ID: US 6500453 B2

L5: Entry 2 of 8 File: USPT Dec 31, 2002

US-PAT-NO: 6500453
DOCUMENT-IDENTIFIER: US 6500453 B2

TITLE: Polymerizable fatty acids, phospholipids and polymerized liposomes therefrom

DATE-ISSUED: December 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Brey; Robert N	Alpharetta	GA		
Liang; Likan	Wheeling	IL		

US-CL-CURRENT: 424/450; 514/557, 560/198, 564/123

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 3. Document ID: US 6426086 B1

L5: Entry 3 of 8 File: USPT Jul 30, 2002

US-PAT-NO: 6426086
DOCUMENT-IDENTIFIER: US 6426086 B1

TITLE: pH-sensitive, serum-stable liposomes

DATE-ISSUED: July 30, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Papahadjopoulos; Demetrios	late of San Francisco	CA		
Meyer; Olivier	Strasbourg			FR
Leroux; Jean-Christophe	Montreal			CA

US-CL-CURRENT: 424/450; 424/1.21, 424/9.321, 424/9.51, 424/94.3, 428/402.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 4. Document ID: US 6395878 B1

L5: Entry 4 of 8 File: USPT May 28, 2002

US-PAT-NO: 6395878
DOCUMENT-IDENTIFIER: US 6395878 B1
** See image for Certificate of Correction **

TITLE: Nucleic acid encoding a human EP prostaglandin receptor

DATE-ISSUED: May 28, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Regan; John W.	Tucson	AZ		
Gil; Daniel W.	Corona del Mar	CA		
Woodward; David F.	Lake Forest	CA		

US-CL-CURRENT: 530/350; 530/300, 530/403

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 5. Document ID: US 6187335 B1

L5: Entry 5 of 8 File: USPT Feb 13, 2001

US-PAT-NO: 6187335
DOCUMENT-IDENTIFIER: US 6187335 B1

TITLE: Polymerizable fatty acids, phospholipids and polymerized liposomes therefrom

DATE-ISSUED: February 13, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Brey; Robert N	Alpharetta	GA		
Liang; Likan	Wheeling	IL		

US-CL-CURRENT: 424/450; 560/198, 564/123

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 6. Document ID: US 5965434 A

L5: Entry 6 of 8 File: USPT Oct 12, 1999

US-PAT-NO: 5965434
DOCUMENT-IDENTIFIER: US 5965434 A

TITLE: Amphipathic PH sensitive compounds and delivery systems for delivering biologically active compounds

DATE-ISSUED: October 12, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wolff; Jon A.	Madison	WI	53705	
Budker; Vladimir	Madison	WI	53705	
Gurevich; Vladimir	Madison	WI	53704	

US-CL-CURRENT: 435/320.1; 264/4.1, 264/4.3, 264/4.6, 424/450, 424/490, 428/402.2, 435/455, 435/458, 514/44, 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 7. Document ID: US 5709879 A

L5: Entry 7 of 8 File: USPT Jan 20, 1998

US-PAT-NO: 5709879
DOCUMENT-IDENTIFIER: US 5709879 A

TITLE: Vaccine compositions containing liposomes

DATE-ISSUED: January 20, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Barchfeld; Gail L.	Hayward	CA		

Ott; Gary	Oakland	CA
Van Nest; Gary A.	El Sobrante	CA

US-CL-CURRENT: 424/450; 424/184.1, 424/204.1, 424/234.1, 424/812, 514/2, 514/937, 514/938

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw De

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☐ 8. Document ID: JP 04124166 A, JP 2601373 B2, US 5206027 A

L5: Entry 8 of 8 File: DWPI Apr 24, 1992

DERWENT-ACC-NO: 1992-189238
DERWENT-WEEK: 199720
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TITLE: Amphiphilic cpds. for forming liposome - contain succinic acid and aminoacid moieties

INVENTOR: KITAGUCHI, H

PRIORITY-DATA: 1990JP-0242981 (September 13, 1990)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 04124166 A	April 24, 1992		012	C07C233/47
JP 2601373 B2	April 16, 1997		009	C07C233/47
US 5206027 A	April 27, 1993		008	A61K009/127

INT-CL (IPC): A61K 9/127; A61K 37/02; B01J 13/02; C07C 229/00; C07C 233/47; C07C 237/22; C07K 5/06; C07K 5/062; C07K 5/08; C07K 5/083; C07K 5/10; C07K 7/06; C07K 99/00; C07M 7/00

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw De

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Terms	Documents
(negatively adj3 charged) adj3 (liposome$) same advantage$	8

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L4: Entry 30 of 32 File: USPT Jan 12, 1982

DOCUMENT-IDENTIFIER: US 4310505 A
TITLE: Lipid vesicles bearing carbohydrate surfaces as lymphatic directed vehicles for therapeutic and diagnostic substances

Brief Summary Text (4):
Gregoriadis and coworkers have labeled liposomes .sup.111 ln through use of .sup.111 ln-labeled bleomycin, Gregoriadis, G. and Neerunjun, E. D. (1975) Biochem. Biophys. Res. Comm, 65, 537-544; Gregoriadis, G. Neerunjun, D. E., and Hunt, R. (1977) Life Sci., 21 357-369. They reported 27-80% of the added radioactivity associated with the phospholipid in negatively charged liposomes and observed 2-4.5% incorporated into positively charged liposomes.

Brief Summary Text (18):
The vesicles can be carried or be loaded with a variety of materials including enzymes for enzyme replacement therapy, hormones, radionuclides, cell-modifying agents, antigens, antibodies, interferon inducers, virus subunit particles, genetic material such as RNA and DNA, and drugs and pharmaceuticals generally. Thus, by way of example, the vesicles can carry antitumor drugs such as methotrexate and actinomycin for cancer chemotherapy. The vesicles of this invention can also be used for glycogen storage disease therapy using amyloglucosiases entrapped within the vesicles.